October 11, 1954

Arthur S. LaPine & Co.
6001 South Knox Avenue
Chicago 29, Illinois

Attention: Mr. J. S. Boros

Dear Mr. Boros:

I was pleased to receive your letter of the 6th indicating your interest in producing nylon centrifuge tubes, as the commercial availability of this item would be a benefit to my own research, as well as to many others.

You would be entirely justified in offering these tubes at two or three times the price of "Lusteroid" tubes. The advantages would be as follows:

1) Durability. [This would be enough by itself!] The lusteroids become brittle with age and use, and have relatively poor mechanical strength to start.

2) Resistance to heat. This is vitally important when one must centrifuge materials under sterile control (as we do in this and in every bacteriological laboratory). Chemical sterilization of "lusteroid" is too clumsy and unreliable, especially since the lusteroid is not resistant to many solvents. The nylon tubes can be sterilized repeatedly under steam sterilization in the autoclave.

3) Mechanical strength. Glass is, of course, not completely reliable, and one feels especially uneasy in handling pathogenic bacteria or dangerous or precious chemicals; lusteroid is not completely satisfactory either at high speeds. Nylon should be all but unbreakable.

4) Porosity: occasional lusteroid tubes are sometimes annoyingly porous, permitting the leakage of small amounts of fluid, probably through minute pores or imperfections. I have no engineering data on this point, but imagine that nylon would be superior.

5) Resistance to chemical attack and consequent ease of cleaning. The lusteroids are similarly much more subject to scratches.

I think you will have no trouble marketing this item. It would be advantageous to have a screw cap or other kind of enclosure. The tubes might then be useful for shipping sterile or dangerous samples where positive assurance against breakage is essential.

The main disadvantages would be 1) cost and 2) lack of transparency. 1) is easily outweighed in many applications, especially in the bacteriological laboratory, by considerations 2-5. And the durability factor should mean substantial saving in the long run. As for 2), this may be partly gotten around by proper choice of molding composition and production; at worst, even the machined nylon tubes I already have are translucent enough for most uses.

I will assume that this information is for your use in evaluating the product and that my name will not be used in any promotion without explicit consent. But it is bound to succeed. Since "nylon" has so many different connotations, the promotion might do better to coin another distinctive name for the plastic as the counterpart of "lusteroid"; not many people are acquainted with the mechanical and thermal properties of nylon in massive, rather than filamentous, form.

With best wishes,

Yours sincerely,

Joshua Lederberg
Professor of Genetics